-----Original Message-----
From: Whitacre, Jan M CIV NAVSUP FLC Pearl Harbor
Sent: Tuesday, October 14, 2014 2:33 PM
To: Reynolds.Rebekah@epa.gov; wade.h.hargrove@hawaii.gov
Cc: Hommon, Rebecca M CIV CNRH, N00L; Coker, David C CIV NAVFAC PAC, 09C; Daugherty, Steven A CIV NAVFAC Pacific, 09C; Yee, Corinne S CIV NAVFAC HAWAII; Vogel, Burr M CDR NAVFAC HI, OP; Poentis, Aaron Y CIV NAVFAC HI, EV; Shimabuku, June T. CIV NAVFAC HI, EV4; Kishaba, Raelynn I CIV NAVFAC HI, EV4; 'Chen, Leslie DLA' (leslie.chen@dla.mil); james.diliberti@dla.mil
Subject: Red Hill Document Production - EPA/DOH Request 1.b. / Navy Questions # 6 & 7 - Dates and Estimated Volumes of Historical Releases

Rebekah/Wade -

The attached documents construction, repairs and historical releases for Red Hill Tank #1. This summary report is provided primarily in response to EPA/DOH Request 1.b. and Navy Questions 6 and 7 for information regarding dates and estimated volumes of historical releases.

I note here that estimates regarding the volume of releases are estimates only and were based on information available at the time of the event. Some, and perhaps all, estimates may be inflated due to losses within the system through leaky valves or within the tell-tale system.

Although the attached is provided pursuant to and in the course of negotiations, the sender poses no restrictions on further distribution.

R,
JMW

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Tank history compiled in March-April 1999 from all available sources by J. Gammon (FISC FUEL SUPT)

Tank History for Tank 1, Red Hill

Date Remarks

Unless otherwise noted, all work in the following entries was done by Morrison Knudsen Company, Inc. and their subcontractors under Pacific Naval Air Base Contractors Contracts NOy 3550 and NOy 4173 (Project Nos. 16, 45, 224, 225, 535, 690, and 691).

12/15/40 Start excavation of 4' x 6' centerline shaft from top of Red Hill to lower access tunnel.

3/3/41 Start ring tunnel.

3/16/41 Start upper dome excavation.

3/30/41 Finish excavation of 4' x 6' centerline shaft.

4/4/41 Start enlargement of 4' x 6' centerline shaft to 12' x 12' from top of upper dome to lower access tunnel.

4/23/41 Finish ring tunnel.

5/16/41 Finish upper dome excavation.

6/24/41 Start upper dome structural steel erection.

6/28/41 Finish enlargement of centerline shaft to 12' x 12'.

7/17/41 Finish upper dome structural steel erection.

7/18/41 Start upper dome steel liner plate.

9/5/41 Finish upper dome steel liner plate.

9/26/41 Start upper dome concrete.

9/29/41 Finish upper dome concrete.

10/3/41 Start upper dome grouting.

10/15/41 Finish upper dome grouting.

10/28/41 Start ring blasting to enlarge 12' x 12' shaft to 30' dia.

11/2/41 Finish ring blasting.

11/3/41 Start excavation of barrel and lower dome.

11/25/41 Start gunniting side walls.

2/28/42 Finish gunniting side walls.

3/19/42 Finish excavation of barrel and lower dome.

3/23/42 Start erection of steel tower.

4/2/42 Finish erection of steel tower.

4/5/42 Start steel liner plate and concreting lower dome.

5/29/42 Finish steel liner plate and concreting lower dome.

6/9/42 Start steel liner plate and concreting side walls (barrel).

7/19/41 Finish steel liner plate and concreting side walls.

8/10/42 Start grouting lower dome.

8/17/42 1. Finish grouting lower dome.
2. Start pre-stress grouting lower dome and barrel.

8/20/42 Finish pre-stress grouting lower dome and barrel.

8/24/42 Start bottom plate and piping connections.

9/9/42 1. Finish bottom plate and piping connections.

2. Start leak testing with water.

9/10/42 Start installing gauges and steam coils.

10/18/42 1. Finish leak testing.

2. Start draining and cleaning tank.

10/22/42 1. Finish installing gauges and steam coils.

2. Finish draining and cleaning tank.

10/26/42 Turn tank over to Navy to fill with Diesel Oil (DO).

1/16/47 At 219'-2-3/8" (ullage 26'-5-11/16") DO draining from tell-tale no. _.

1/16-19/47 Draw down DO to 50'-0-0" by transfer to Upper Tank Farm Tanks 47 and 54. DO draining from tell-tale no. _ at 5 gal in 8 minutes.

1/20/47 Clean tank. Install new jump pipes on collector ring. Labor - $1855. Material - $460.

1/22-2/20/47 Clean and wash tank. Test and repair inside tank.

2/21/47 Fill tank with DO to 52'-11-1/4". No leaks.

4/30/47 Fill tank with DO to 129'-9-3/16". No leaks.

8/14/53 1. At 219'-1-3/8" DO draining from tell-tale no. 7.

2. Draw down DO to 47'-1-1/2" by transfer to Tanks 47 and 53. DO stopped draining from tell-tale no. 7 at 47'-1-1/2".

8/20/53 Draw down DO to empty and prepare for testing and repairs.

8/21/53 1. Clean and wash tank.

2. Fill and test tank with water.

3. Leak found on tell-tale no. 7 and crack in tank.

9/15/53 Clean tank. Labor - $1921. Material - $286.

9/17/53 Test tank. Hydrostatic test with 5 gal dye. Labor - $150. Material - $24.

1/8/54 Renew 14 tell-tales. Labor - $1495. Material - $135.

5/12/54 Fill tank with DO to 230'-8-1/16" (ullage 14'-11-7/8").

No leaks.

_/_/6_ Convert from DO to JP-5.

10/11/63 Calibrated gauge.

8/1/64 At 215'-4-3/4" drainage from tell-tale no. 2 at 1 quart in 2-1/2 minutes.

8/3-4/64 Draw down JP-5 to 154'-0" by transfer to Tank 20.

8/4/64 At 154'-0" drainage from tell-tales as follows:

a. No. 3 - 1 drop in 10 sec.

b. No. 2 - 1 quart in 4 min. 10 sec.

8/10/64 At 49'-11-3/4" drainage from tell-tales as follows:

a. No. 2 - 1 quart in 1 hour

b. No. 3 - trace amount

8/18/64 At 49'-11-3/4" drainage from tell-tales as follows:

a. No. 1 - start draining after nipple removed

b. No. 2 - slow

c. No. 3 - trace amount

d. No. 8 - trace amount

e. No. 10 - slow

f. No. 12 - trace amount

8/19-9/13/64 Draw down JP-5 to empty.

9/14-10/28/64 Tank cleaned to locate leaks which initially showed up in several tell-tale pipes, but not in collector ring. **Subsequently, collector ring was found to be plugged and** leaking in five places. Apparently, leakage backed up through jumper pipes and was finally released through other tell-tale piping. Collector ring was cleaned out and repaired. Inspection of portion of collector ring removed indicated replacement was not necessary. All other bottom. (Pictures were taken and are on file.) All tell-tale piping at tank bottom was air-tested and Coated with Devron. Labor - $1500. Material - $75.

11/17-18/64 Fill tank with water to 50'-2-3/8".

12/25/64 Empty water.

12/30/64-1/14/65 Fill tank with JP-5 in stages to 199'-0-1/8".

5/3/65 At 198'-10-7/8" drainage from tell-tales as follows:

a. No. 8 - 23 cc

b. No. 2 - 3 cc

c. No. 5 - 1 cc

5/3-6/65 Draw down JP-5 to empty by transfer to Tanks 2 and 55.

5/17/65 Fill with DO.

7/7/65 At 117'-3-1/2" water draining from tell-tales as follows:

a. No. 2 - slow

b. No. 8 - slow

c. No. 11 - slow

2/18/66 At 154'-10-3/4" drainage from tell-tales as follows:

a. No. 2 - fuel and water

b. No. 8 - fuel and water

c. No. 11 - fuel and water

d. No. 9 - water

9/27/67 At 230'-10-1/8" drainage from tell-tales as follows:

a. No. 8 - water

b. No. 11 - water

1/3/70 Empty for cleaning and conversion to JP-5.

1/16-22/70 Clean tank. Labor - $235 (72 hours). Material - $0.

2/4-16/70 Fill with JP-5 in stages to 204'-1-1/8".

8/21-10/23/70 Unexplained drop in tank level from 230'-5-1/4" to 230'-2" during period of static storage for a loss of 4,623 gal (73.4 gal/day) over 63 days.

10/24/70-5/3/71 Unexplained drop in tank level from 230'-1" to 229'-1-7/8" during period of static storage for a loss of 16,830 gal 88.1 gal/day) over 191 days.

7/27-9/2/71 Unexplained drop in tank level from 230'-8-1/4" to 230'-4-5/8' during a period of static storage for a loss of 5,031 gal (136.0 gal/day) over 37 days.

3/1-4/26/72 Unexplained drop in tank level from 230'-9-1/4" to 230"-0-1/2" during a period of static storage for a loss of 4,810 gal (85.9 gal/day) over 56 days.

3/20/73 Finished draw down of JP-5 to empty.

3/21/73 Welded 10" flange and stub on 10" waterline.

3/29-4/3/73 Washed and cleaned tank. Labor - $360.

4/6/73 With tank empty water draining from tell-tales as follows:

a. Nos. 1, 2, 8, and 10 - 2 drops/sec.

b. Nos. 11 and 12 - 1 quart in 5 min.

4/8/73 With tank empty water draining from tell-tales as follows:

a. Nos. 2 and 8 - 1 drop/10 sec.

b. No. 3 - 1 drop/sec.

c. No. 11 - 1 drop/min.

d. No. 12 - 1 drop. 5 sec.

4/9/73 Fire in tank caused by contractor's welding.

4/13/73 Remove 6" valve and install reconditioned valve. Labor - $60.

4/14/73 Coring contractor work on tank.

4/18/73 Check for leak in tell-tale piping.

4/19/73 Repaired piping and installed 6" standard valve.

4/23/73 Fill with JP-5 to 43'-7" from Tanker Sunico at Hotel Pier.

7/31/73 Fill with JP-5 to 61'-8-1/8" from Tank 55.

8/5/73 Fill with JP-5 to ___ from Tank 13.

9/12/73 Telemeter system installed.

10/15/73 Fill with JP-5 from 134.091' to 146.712' from Tank 55.

1/7/74 Fill with JP-5 to 190.179' from Tank 55.

5/1-7/75 At 189.989' an unexplained drop in tank level occurred down to 189.807' for a loss of 10,671 gal (1778 gal/day) over six days.

5/7/75 Draw down JP-5 to 184.750'. Tank level stops dropping.

10/12-12/26/77 At 184.291' drainage from tell-tale no. 3 at 8 drops/min. Tank level drops from 184.291' to 184.274' for a loss of 999 gal (13.4 gal/day) over 75 days.

12/26/77-4/19/78 At 184.274' drainage from tell-tales no. 3 and 8 average a total of 10.85 drops/min. Tank level drops from 184.274' to 184.140' for a loss of 7,874 gal (68.9 gal/day) over 114 days.

4/19-8/24/78 At 183.550' drainage from tell-tales no. 3 and 8 average a total of 10.86 drops/min. Tank level drops from 183.550' to 183.325' for a loss of 13,221 gal (104.1 gal/day) over 127 days.

5/15/78 Contract N62471-77-C-1316 for MILCON Project P-060, Modernization of Red Hill POL Facility, awarded to Dillingham Corp. (Hawaiian Dredging and Construction) of Honolulu, HI. Award price - $19,912,000. Project administered by ROICC Pearl Harbor.

10/18-22/81 Draw down JP-5 from 184.129' to empty.

10/23/81-7/23/82 Following work done under Contract N62471-77-C-1316. Refer to NAVFAC Drawing Nos. 7019532/33/34/38/39/41/42/43/44/45.

1. Wash and clean tank.
2. Repair and modify center tower.
3. Remove original tell-tale pipes and patch holes in tank shell.
4. Inspect, repair, and test butt welds connecting steel liner plates, and locate and patch holes in plates.
5. Remove steam heating coils and supports, and remove 4" dia. steam line from 8" dia. casing pipe between tank bottom and Lower Access Tunnel.
6. Install four 3/4" dia. sample lines from the tank to

the Lower Access Tunnel via the 8" dia. steam line casing pipe.

7. Hydrostatically test 8" dia. bottom drain (slop) line from tank bottom to skin valve in Lower Access Tunnel. Test failed. Weld patch plate over nozzle on tank bottom and abandon pipe.

8. Hydrostatically test 6" dia. steam condensate line casing. Test passed. Convert to bottom drain (slop) line.

9. Sandblast and coat steel liner plates with NRL polyurethane coating system.

10. Overhaul 12" skin valve on 18" dia. suction/fill line and 20" skin valve on 32" dia. suction/fill line. Valves are Walworth OS&Y rising stem gate valves.

7/23/82 Begin one year warranty for basic contract work.

7/23-24/82 Fill with JP-5 to 128.839' by gravitating from Tank 10.

7/27/82 Fill with JP-5 from 128.830' to 230.028' by pumping from Surge Tank 4 and Tank 55.

7/28-8/3/82 Leak test no. 1. Disregard initial tank level drop from 230.028' to 229.990' to allow for tank settling following transfer. Tank level drops from 229.990' to 229.853' for a loss of 2416.7 gal (402.8 gal/day) over 6 days.

8/3/82 Draw down JP-5 from 229.957' to 201.050 by gravitating to Tank 55.

8/3-9/28/82 Leak test no. 1 continues. Disregard initial tank level drop from 201.050' to 200.990' to allow for tank settling following transfer. Tank level drops from 200.990' to 200.974' for a loss of 870.9 gal (15.9 gal/day) over 54.67 days.

9/28-10/1/82 Draw down JP-5 to empty by gravitating to Tank 10 and Tank 55.

10/1-11/2/82 Contractor re-enter for first leak search and repair.

11/2/82 Begin one year warranty for tank leak repair work.

11/2/82 Fill with JP-5 to 67.013' by gravitating from Tank 7.

11/3/82 Fill with JP-5 from 67.013' to 164.244' by pumping from Surge Tank 4 and Tank 55.

11/5-6/82 Fill with JP-5 from 164.244' to 230.018' by pumping from Tank 55.

11/8/82 Fuel Maint recalibrate telemeter to 229.907'.

11/8/82-1/25/83 Leak test no. 2. Disregard initial tank level drop from 229.907' to 229.852' to allow for tank settling following transfer. Tank level drops from 229.852' to 229.728' for a loss of 2229.0 gal (29.5 gal/day) over 75.67 days.

1/26/83 Draw down JP-5 from 229.728' to 136.371' by gravitating to Tank 17.

1/27/83 Draw down JP-5 from 136.371' to 99.851' by gravitating to Tank 55.

1/28-29/83 Draw down JP-5 from 99.851' to empty by gravitating to Tank 55.

1/31-2/17/83 Contractor re-enter for second leak search and repair. Repair known leak on 8" dia. sample line casing.

2/17/83 Begin one year warranty for leak repair on 8" dia. sample line casing.

2/17-18/83 Fill with JP-5 to 126.854' by gravitating from Tank 19.

2/18/83 Fill with JP-5 from 126.854' to 204.404' by pumping from

Tank 55.

2/19/83 Fill with JP-5 from 204.404' to 230.107' by pumping from Tank 55.

2/20-3/15/83 Leak test no. 3. Tank level rises from 230.107' to 230.170' for a gain of 1090.2 gal (47.4 gal/day) over 23 days.

3/15/83 Tank considered fully serviceable by ROICC.

3/15-4/22/83 Leak test no. 3 continues. Tank level rises from 230.170' to 230.228 for a gain of 1003.6 gal (26.4 gal/day) over 38 days.

8/11-9/30/99 Draw down JP-5 from 210.452 to empty for Project PRL91-3 to replace the skin valves, motorized valves, and cross-tunnel pipelines.

9/21/99 At 0700 with level at 22.396= remaining stub of tell-tale pipe no. 11 (second from the top) found to be leaking a steady stream into the Lower Access Tunnel. Fuel Maint capped pipe to stop leak.